

KOSTROVA, Z.P.

[illegible][illegible]

Shedately... (Paper Read at the Second All-Union Conference of Analytical Spectroscopists in Moscow (Bakulsky) Moscow, December-1971. 3-4 January 1972, 1972. 128 p. 2,000 copies printed.

***FURNITURE AND CASES AVAILABLE FOR RENT OR PURCHASE**

Mikhail Zaslavskii, L.I. Britskii, A.B. Zhuravskii, S.L. Zhuravskii, V.V. Polyakov,
L.I. Filanovskii, Dokl. Akad. Nauk SSSR, 1977.

...to the fact that the ...

concentrations. This is a collection of papers dealing with the use of the spectroscopic method as practiced in the USSR for the quantitative determination of various elements in the field of metallurgical engineering. Importance placed on practical applications of the method is stressed. In addition to the production of standard samples, for a brief report of the state of research on the use of the method in the USSR, see Table of Contents, first article. There are 2,175 in this field in the USSR, see Table of Contents, first article. See also 1-2 for color reference; both Soviet and non-Soviet.

12. Синтетическое, п. 9. [Vaccinium aluminifolium-synthetic fertilizer-112.
Solid Aluminum and Magnesium Fertilizer, patented]. Preparation of Synthetic

14. Speckly, A.G., A.V. McGowan, and R.A. Paul [Institute for the Study of the Americas, University of California, San Diego, La Jolla, California]

smaller I select small hollow-bellies for removal to the
in. hollow, hollow]. An investigation of Methods of Cutting Standard
Samples for the Spectroscopic Analysis of Irons

14. Flowers, I.L. "Polliniferous and staminate involucres."

Department of the Interior, Bureau of Land Management, Washington, D. C. 20246

20. In addition, it is also requested that the boundary between Bala Plant, Incorporated of Astoria, Ore., and Bala is adjusted along with the B-T Refinery

16. *Impatiens*, n. sp. [Barber Secondary Succession Reefs Plant]. Herb
near the Plant Spectroscopic Laboratory

27. **Wills, T.L.** *Disability Income-Taxpayers' Second-Source Issues and Recent Developments*. Washington, D.C.: American College of Trust and Estate Counsel, 1992.

Plant: Application of appropriate measures to manage weeds and insect plants

U. M. Mikhlin, M. S. (collectively) Joint authors
with Polymers (Cambridge). From the Work Practices of the Spectrograph
Laboratory of the Land Plant of the Leningrad Polytechnical College

19. Butyric Acid.—(Probably elevated-Noradibutic Acid).
 Analysis of Spectroscopic Analysis at the Noradibutic Acid Plant

26. Specimens, U.S. [Federality Government-Biology Tia Plant]. Work
on the laboratory of the Biology Tia Plant

21. Gladstons, V.L., Dr.P. Alekseyenko, Ye.Ye. Zhukovskiy, I.B. Zhukovskiy, and V. M. Zhukovskiy (Borli'skiy zavod na ulitsy Gorkogo).

constant-short-light mixing and mathematical combinatorics]. On the accuracy of spectroscopic methods of spectroscopic analysis in preparing calibration curves by standard methods.

28. *Allycia*, s.l. ["Many *Yburchia* Plant"]. Quantities recorded.

1980-1981

100

100


SOV/58-59-5-11878

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 281 (USSR)

AUTHORS: Pisarev, V.D., Kornilov, A.V., Kostrova, Z.P., Bragina, T.D.

TITLE: Spectral Analysis⁷¹ of Tin Slags

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, 1958, Nr 36, pp 269-272

ABSTRACT: The authors describe a spectrographic method of analyzing tin slags, samples of which have been solubilized. They used an ISP-22 spectrograph and an IT-2 generator as the excitation source. The divergence from the results of chemical analysis is characterized by a mean arithmetical error of 3.2 - 7.5%. 

Card 1/1

KOSTROVENKO, A., ispolnyayushchiy obyazannost' inzhenera.

Guarantee of success. Kinonekhanik no.6:6-7 Je '53.

(MLRA 6:8)

1. Oblupravleniye kinofikatsii (Khar'kov).

(Moving-picture projection)

ZYATIN, Nikolay Aleksandrovich; KOSTROVITSKIY, Naum Yur'yevich

[Electric welding of rails on street railroad tracks]
Elektrovannaia svarka rel'sov v putiakh tramvaia. Moskva,
Stroiizdat, 1965. 33 p. (MIRA 18:5)

KOMAROV, Aleksey Nikolayevich; KOSTROVSKIY, Georgiy Ivanovich; DUBROVSKIY,
V.A., redaktor; BALLOD, A.I., tekhnicheskii redaktor

[Repair of "Stalinets-80" tractor] Remont traktora "Stalinets-80."
Izd. 2-oe, perer. i dop. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956.
383 p. (MLRA 9:11)
(Tractors—Repairing)

KOSTROVSKIY, G. I. Doc Cand Tech Scie -- (diss) ¹¹ "The Study
(The mechanism of) of operation and wearing ^{and tear} ~~out~~ of the splined joints of the
gear-driven transmissions." City of Zernovoy (Rostovskaya
Oblast), 1957. 14 pp 1 graph sheet 20 cm. (Min of ^{State Farms} ~~Sovkhozos~~
USSR. All-Union Scientific Research Inst ^{of} ~~for~~ Mechanization
and Electrification of Sovkhozos) ^(VNIIMES), 106 copies
(KL, 21-57, 102)

KOSTROWICKI, A.

Fragmenta Faunistica Musei Zoologici Polonici - Vol. 6, no. 16, May 1953.

Studies on Lepidoptera of xerothermic hills in the valley of the lower Nida. p. 263.

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 9, Sept. 1955
Uncl.

KOSTROWICKI, A.

"A glance at the fauna of the projected national park in Krzyzanowice on the Nida River" (p.13). CHRONMY PRZYRODE OBCZYSTA (Panstwowa Rada Ochrony Przyrody) Krakow, Vol 9, No 5, Sept./ Oct. 1953.

SO: East European Accessions List, Vol 3, No8, Aug 1954

KOSTROWICKI, A.

"Some Notes on the Biogenesis of Fauna of Xerothermic Heights in the Valley of the Nida River." P. 66
(PRZEGLAD GEOGRAGICZNY. POLISH GEOGRAPHICAL REVIEW, Vol. 26, No. 1, 1954, Warszawa, Poland.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3,
No. 12, Dec. 1954, Uncl.

KOSTROWICKI, A.

Two new European species of the subfamily Cuculiinae
(Lepidoptera, Phalaenidae). p.1.

ANNALES ZOOLOGICI. (Polska Akademia Nauk. Instytut
Zoologiczny) Warszawa.

Vol. 16, no. 7, Jan. 1956.

SOURCE: East European Accessions List (EEAL), Library of Congress
Vol. 5, No. 12, December 1956.

KOSTROWICKI, J.

"Townmaking functions and functional types of cities. p. 7." (PRZEGLAD
GEOGRAFICZNY. POLISH GEOGRAPHICAL REVIEW, Vol. 24, no. 1/2, 1952,
Warszawa, Poland.)

SO: East European L. C. Vol. 2, No. 12, Dec. 1953

KOSTROMICKI, J.

"Development of Economic Geography During the Decade of People's Poland." P. 53
(PRZEGLĄD GEOGRAFICZNY. POLISH GEOGRAPHICAL REVIEW, Vol. 26, No. 3, 1954, Warszawa,
Poland.)

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 3,
No. 12, Dec. 1954, Uncl.

KOSTROWICKI, J.

International Conference on Regional Planning and Development.
p. 389. PRZEGLAD GEOGRAFICZNY. POLISH GEOGRAPHICAL REVIEW.
(Polska Akademia Nauk. Instytut Geografii) Warszawa.
Vol. 28, no. 2, 1956.

SOURCE: East European Accessions List (EEAL), Library of Congress
Vol. 15, No. 12, December 1956.

KOSTROWICKI, J.; WIECKOWSKI, K.

Scientific Congress of the Polish Soil Society. p.451.
PRZEGLAD GEOGRAFICZNY. POLISH GEOGRAPHICAL REVIEW.
(Polska Akademia Nauk. Instytut Geografii) Warszawa.
Vol. 28, no. 2, 1956.

SOURCE: East European Accessions List (EEAL), Library of Congress
Vol. 5, No. 12, December 1956.

KOSTROWICHI, JERZY

Geography & Geology

Srodowisko geograficzne Polski; warunki przyrodnicze rozwoju gospodarki narodowej. Warszawa, Panstwowe Wydawn. Naukowe, 1957. 542 p. (Poland's geographical setting; the natural conditions of national economic development.)
Midw

Monthly List of East European Acessions (EEAI), LC, Vol. 8, No. 3, March 1959
Unclass.

AUTHOR: Kostrovitski , Jerzy (Poland) SOV-10-58-4-19/28

TITLE: Polish Investigations Into Land Utilization (Pol'skiye issledovaniya ispol'zovaniya zemel')

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1958, Nr 4, pp 131-134 (USSR)

ABSTRACT: The article deals with the preparation of detailed maps on the utilization of land in Poland. The work was started in 1947 at the initiative of the GUPP (Main Administration of Regional Planning) and was later continued in the laboratory of the Institute of Geography of the Polish Academy of Sciences under the supervision of Professor F. Ukhorchak. In 1954 Professor K. Dziekowski prepared the first map in a scale of 1 : 25,000 which proved to be of great value for the development and improvement of agricultural conditions. There are 5 English references.

1. Agriculture--Development 2. Cartography--Applications

Card 1/1

AUTHOR: Kostrowicki, Jerzy, Professor 26-58-5-12/57

TITLE: Sulfur-Bearing Raw Material in Poland (Seronosmoye syr'ye v Pol'she)

PERIODICAL: Priroda, 1958, Nr 5, pp 67-70 (USSR)

ABSTRACT: Sulfides, among them mainly the sulfide ores of zinc and lead, were formerly the principal raw material for the production of sulphuric acid in Poland. They are found in the Triassic limestones of the north and east borderlands and in the surroundings of the Upper-Silesian hard-coal basin. Pyrites are found in the Swietokrzyskie Mountains in connection with Devonian limestones. However, more pyrites had to be imported. Due to the development of a chemical industry in Poland and the increasing demands for sulphuric acid, gypsum and anhydrite deposits of the country were considered as potential raw material in the 6-Year Plan 1949-1955. These deposits were traced back to two seas that covered Poland in the Upper Permian and Miocene epoch. However, deposits in the Kujawy and Pomorze regions could not be exploited, due to their depth of over 1,000 m. Only the sites of certain anticlinal bulges can be successfully mined. Similar possibilities are located on the edges of the

Card 1/3

Sulfur-Bearing Raw Material in Poland

26-58-5-12/57

former Zechstein Sea. Certain gypsum seams extending from Upper Silesia via Krakow and Sandomir farther east came under systematic exploitation during the first Polish Six-Year Plan. In the fall of 1953, the eminent Polish geologist Professor Stanislaw Pawlowski discovered a large sulfur deposit near Tarnobrzeg. Its area is 23 sq km with an estimated 105 million tons of pure sulfur. This deposit is second only to those in the US and Mexico. Their sulfur content in the sulfur-bearing layer of the Tarnobrzeg area varies between 19 and 28%, the thickness of the seam from 8 to 20 m. A major part of the deposit is beneath the Visla river valley. The depth of the deposit is between 60 and 110 m. Basing the prospecting on his geological theory of disintegration of gypsum into sulfur and limestone, Professor Pawlowski has discovered several other sulfur deposits in the southern part of the Kieleckie Województwo, an estimated 5.5 million tons of pure sulfur. These deposits are at a depth of 20 to 65 m and contains 18 - 24% sulfur. The layer is 5 to 6 m thick. Another sulfur-bearing deposit was discovered in Grzybów. The relevant layers are at a depth of 160 to 200 m, the sulfur content attains 30%, the layer is 10 m thick. Prospecting in the Visla and

Card 2/3

Sulfur-Bearing Raw Material in Poland

26-58-5-12/57

San river areas is continuing. There are also sulfur-bearing deposits in Soviet territory near L'vov. Together, all reliable sulfur-bearing deposits in Poland are estimated at 110.5 million tons, but more are bound to be discovered. Poland will obtain credit from the CSR to open up recent discoveries.

There are two schematic maps.

(Translator of this Polish language article Yu.V. Ilinich)

ASSOCIATION: Institut geografii Pol'skoy Akademii nauk, Varshava (The Polish Academy of Sciences Institute of Geography, Warsaw)

AVAILABLE: Library of Congress

Card 3/3 1. Zinc sulfides - Poland 2. Lead sulfides - Poland
 3. Sulfur ores - Poland

KOSTROWICKI, Jerzy, dr. Extraord. prof.

Economic geography in Poland; development and present state.
Przegl geogr Suppl. to v.31:21-34 '59. (EEAI 9:6)

1. Department of Economic Geography of Poland of the Geographical
Institute of the Warsaw University.
(Poland --Geography)

KOSTROWICKI, Jerzy

Land utilization survey as a basis for geographical typology of agriculture. Przegl geogr Suppl. to 32:169-183 '60. (EEAI 10:4)

1. Polish Academy of Sciences, Institute of Geography, Department of the Geography of Agriculture, Warsaw.
(Poland--Land)

KOSTROWICKI, Jerzy

Geographical-agricultural problems in the detailed survey of land utilization in Poland. Przegl geogr 32 no.3:227-279 '60.

(EEAI 10:3)

1. Zaklad Geografii Rolnictwa, Instytut Geografii PAN.
(Poland--Land)

KOSTROWICKI, Jerzy

Poland

no title given

no affiliation

Warsaw, Przegląd Geograficzny, Vol 34, No 3, 1962,
pp 585-592.

"X-th Pacific Science Congress--Honolulu Aug 22-
Nov 6, 1961"

KOSTROWICKI, Jerzy

Poland

no title given

Visiting Professor at the University of Michigan,
Department of Geography

Warsaw, Przegląd Geograficzny, Vol 34, No 3, 1962,
pp 633-645.

"Report from a Sojourn in the United States and
other Countries Overseas". (Mar 23-Oct 23, 1961)

KOSTROWICKI, Jerzy

10th Pacific Science Congress. Przegl geogr 34 no.3:585-593 '62.

KOSTROWICKI, Jerzy

Report form a stay in the United States and other overseas countries, March 23-October 23, 1961. Przegl geogr 34 no.3:633-645 '62.

KOSTROWICKI, Jerzy

Conference of the Geographical Institute of the Polish Academy
of Sciences on the Bases of Development of the Bialystok
Voivodeship. Przegl geogr 35 no.2:302-305 '63.

KOSTROWICKI, Jerzy

~~Development bases and trends of the Bialystok Voivodeship. Przegl~~
geogr 35 no.2:181-198 '63.

KOSTROWICKI, Jerzy

Development bases of the Bialystok Voivodeship; Conference of the
Institute of Geography, Polish Academy of Sciences, Bialystok,
October, 8-11, 1962. Nauka polska 11 no.3:157-160 My-Je '63.

1. Instytut Geografii , Polska Akademia Nauk, Warszawa.

KOSTROWICKI, Jerzy, prof. dr.

Polish geography during the recent 20-year period. Przegl geogr
36 no.3:427-450 1964.

COUNTRY : Czechoslovakia
CATEGORY :

ABS. JOUR. : RZKhim., No. 21 1959, No. 76643

APPROVED FOR RELEASE: 06/14/2000, and Bratislava, A.

AUTHOR : Not given
INST. :
TITLE : Experimental Data on a New Process for the Preservation of Eggs

ORIG. PUB. : Prumysl Potravin, 9, No 10, 526-529 (1959)

ABSTRACT : The results from preliminary experiments on the preservation of eggs by the coating of shells with a thin film of preserving paste (composition not given) are described. An insignificant decrease in the weight of the eggs and an increase in the size of the air cell are observed after storage for 6 months at a temperature of 15-42° and a relative humidity of 50-75%. The quality of the eggs met the requirements of the standard. A control batch of untreated eggs was

CARD: 1/2

295

CARD: 2/2

KOSTRUBA, I.; IGDAL, I.; MAYDEN, A.

Estonia-1 mobile mixed feed unit. Mik.-elev. prom. 28 no.11:23-24
N '62. (MIRA 16:2)

1. Ministerstvo proizvodstva i zagotovok sel'skokhozyaystvennykh
produktov Estonskoy SSR (for Konstruba, Igdal). 2. Tallinskiy
elevator (for Mayden).
(Tallinn—Feed mills)

KOSTRUBA, J.

TECHNOLOGY

periodicals: HUTNIK Vol. 8, no. 11, Nov. 1958

KOSTRUBA, J. Clean ingots. p. 368

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5
May 1959, Unclass.

EBIE, L.Ye., doktor tekhn. nauk, prof.; YAKOB, A.I., kand. tekhn. nauk;
KOSTELBA, S.I., inzh.

Causes of milk retention in cows during machine milking.
Veterinariia 41 no.2:80-81 F '65. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii
sel'skogo khozyaystva.

SZELAG, Janusz; KOSTRUBALA, Andrzej

Evaluation of the vaccine and effectiveness of vaccinations against typhoid fever. XXIII. An epidemic of typhoid fever in Gliniojeck in 1962/1963. Przegl. epidem. 16 no.4:433-438 '64.

1. Z Warszawskiej Wojewodzkiej Stacji Sanitarno-Epidemiologicznej w Aninie (Dyrektor: dr. med. J. Zasztowt).

JARZEBSKA, Danuta; KOSTRUBALA, Maria; KUBICKA, Krystyna; LESKIEWICZ, Wanda;
LAZOWSKI, Zygmunt; POLAKOWA, Irena

Further observations on the prevention of relapses of rheumatic disease
in children. Reumatologia Polska no.3:177-181 '60.

1. Z Poradni Reumatologicznej Instytutu Reumatologicznego w Warszawie
Dyrektor Instytutu: prof. dr med. E. Reicher Z Poradni Reumatologicznej przy II Klinice Chorob Dzieci AM w Warszawie p.o. Kierownika Kliniki: prof. dr med. T. Lewenfisz-Wojnarowska
(RHEUMATIC FEVER prev & control)

KOSTRUBALA, Maria; WISNIEWSKA, Mirosława

Treatment of enterobiasis with the preparation Molevac. Wlad.
parazyt. 9 no.3:241-242 '63.

1. II Klinika Pediatryczna i Laboratorium PSK Nr 4 Akademii
Medycznej, Warszawa.
(PYRVINIUM COMPOUNDS) (OXYURIASIS)

BUCZYNSKI, Eugeniusz; GLOWACKA, Mirosława; KULESZA, Halina; KOSTRUBALA, Maria

A case of moniliasis and aspergillosis of the lungs and paranasal sinuses in a 7-year-old girl. Otolaryng. Pol. 18 no.2:295-298 '64.

1. Z II Kliniki Pediatricznej Akademii Medycznej w Warszawie (Kierownik: prof. dr. med. T. Lewenfisz-Wojnarowska); z Zakładu Radiologii Pediatricznej Akademii Medycznej w Warszawie (Kierownik: prof. dr. med. K. Rowinski) i z Oddziału Laryngologii przy II Klinice Pediatricznej (Kierownik: doc. dr. med. J. Danielewicz).

IVANOV, M.V.; KOSTRUBA, M.F.

Microbiological investigations of the sulphur beds of the Carpathian Mountain region. Part 3: Formation of hydrogen sulfide in the Yazov sulphur bed. Mikrobiologiya 30 no.1:130-134 Ja-F '61.

(MIRA 14:5)

1. Institut mikrobiologii AN SSSR.

(CARPATHIAN MOUNTAIN REGION--BACTERIA, SULFUR)

(HYDROGEN SULFIDE)

KOSTUBIN, M.V.

~~XXXXXXXXXX~~
Pectic substances and hemicelluloses of flax stalks. Biokhimiya 18,
175-83 '53. (MLRA 6:4)
(GA 47 no.17:8843 '53)

1. Pedagog. Inst., Orlov.

KOSTRUBIN, M. V.

Chemical Abst.
1. 48 No. 3
10, 1954
Biological Chemistry

(4)
Pectin substances and hemicelluloses of the stems of
hemp. M. V. Kostrubin, V. V. Zababurina, and V. S.
Kon'kova (Orlov State Pedagog. Inst., Chair of Chem.).
Biokhimiya 18, 263-70(1953); cf. *Scientific Repts. of the*
Orlov State Pedagogical Inst. No. 2, 113(1947).—Data ob-
tained indicate that the compn. and transformation of pec-
tin substances and hemicelluloses in the stems of flax and
hemp during the process of their growth are alike.
B. S. Levine

Kostrubin, M. V.

(The formation and conversion of hemicellulose in wheat stems. M. V. Kostrubin (State Pedagog. Inst., Orlovsk Dist.). *Botanika* 20, 360-7 (1955).--Stems of *Triticum vulgare* were collected for study at four stages of the wheat growth: 1) the early period of spike formation, 2) the beginning of milky juice formation, 3) the beginning of wax formation, and 4) the complete grain maturity. Free fructose and fructosan were found in the wheat stems. As the lignification process progressed the quantities of fructose and fructosan gradually became reduced to zero. Starch was not found in the wheat stems. It is, therefore, assumed that fructosan constitutes the only form of polysaccharide reserve. Pectin substances which were found only in small quantities in the wheat stems even in the early stages of the plant's growth became sharply reduced as lignification progressed. Cellulose accumulation in the wheat plant stems ends with the completion of the waxy stage, thereafter its quantity becomes reduced gradually. It is believed that cellulose is converted into other substances such as xylan. The presence in the wheat stems of hemicelluloses A and B was also demonstrated. Some exptl. data indicated that hemicellulose A consists basically of polysaccharides of the glucose type, namely, glucan, glucuronide, and xylan plus small quantities of mannan, arabin, and possibly galactan. As the process of lignification advanced there occurred in the hemicelluloses an accumulation of pentoses and a reduction in the hexoses. It is believed that pentosans are formed directly from hexosans through the process of oxidative dehydroxylation. B. S. Levine

KOSTENUBIN, M. V.

Vice President: [illegible]
 [illegible]

[illegible]

KOSTRUBINA, Ye.N.

Oculocardiac reflex in 4-7 year old children according to
electrocardiographic data. Uch. zap. MGPI no.168:159-166
'62. (MIRA 19:2)

KABANOV, A.N.; KOSTYUBINA, Ye.F.

Characteristics of the course of oculocardiac reflex in small
children. Uch. zap. MDPI no.166:167-180 '62.

(HRA 19:2)

KOSTRUBINA, Ye.N.

Nature of the course of oculocardiac reflex in adults. Uch.
zap. Orlov. gos. ped. inst. 18:93-100 '63.

Age characteristics of the oculocardiac reflex. Ibid.:101-110
(MIRA 17:5)

VYMAZAL, J.; technicka spolupraće HCWORKOVA, B.; KOSTRUNKOVA, A.; VONKOVA, J.

Contribution to the problem of the sensitivity of colloid reactions in the cerebrospinal fluid with special reference to the collargol reaction. Cesk. neurol. 25, no. 6: 365-373 N '62.

1. Neurologická klinika fakulty všeobecného lékařství University Karlovy v Praze, přednosta akademik K. Henner.
(CEREBROSPINAL FLUID) (COLLOIDS) (SILVER)

VYMAZAL, J.; Technicka spoluprace: HOVORKOVA, B.; KOSTRUNKOVA, A.

Contribution to the mechanism of globulin reactions in the cerebrospinal fluid and their relation to individual protein fractions. Cesk. neurol. 26 no.6:388-393 N°63.

1. Neurologicka klinika fakulty vseobecneho lekarstvi KU v Praze, prednosta akademik K. Henner.

*

KOSTRUSHIN, A.V., inzh.

Double-chamber furnace for burning woodwaste and other small size
fuel. Izobr. v SSSR 3 no.3:8-9 Mr '58. (MIRA 11:3)
(Wood as fuel) (Furnaces)

KOSTRUSIAK, Jerzy, mgr.

Publications of the Centrostal in the field of technological
consulting and rational and economical application of steel.
Wiad hutn 18 no.6:185-187 Je '62.

KOSTRUSIAK, Jerzy, mgr

Information on publications of the Central Publishing
Committee. Wlad hut 15 [i.e. 20] no. 2: 64-65 F '64.

KOSTRUSIAK, Jerzy (Katowice)

Press, radio, television in the service of industrial safety and hygiene in the building and building material industries. Przegl budowl i bud mieszk 34 no.11:679-680 N '62.

KOSTRUSIAK, Jerzy, mgr.

Centrostal's technical and commercial information service.
Wlad hut 21 no.2:60-61 F '65.

KOVCHAVTSEV, P.G., inzh; KOSTRYGIN, V.A., inzh.; STOROZHUK, K.S., inzh.

Reconstruction of RVS-110 valve-type discharger. Elek.sta. 30
no.2:65-66 F '59. (MIRA 12:3)
(Electric power distribution--Equipment and supplies)

83001
S/181/60/002/008/020/045
B006/B070

24,7800

AUTHOR: Kostygin, V. A.

TITLE: Investigation of the Discharge Delay in Single Crystals of NaCl of Small Thickness

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 8, pp. 1841-1845

TEXT: Investigations carried at Tomskiy politekhnicheskii institut (Tomsk Polytechnic Institute) have shown that the discharges in gases and solid dielectrics follow analogous laws. G. A. Vorob'yev has already (Ref. 7) pointed out the discharge delays in thin layers of a dielectric resulting from the steep rise of the current. The delay time increases with decreasing thickness of the layer. In the present work, experimental results on the discharge delays in thin single crystals of rock salt are given. First the preparation of the sample is described in short. Fig. 1 shows a 120 times enlarged microphotograph of a sample. At the thinnest point, the sample has a thickness of 20μ . The samples were exposed to rectangular pulses whose front had a duration of $5 \cdot 10^{-8}$ sec. The breakdown

Card 1/3

83001

Investigation of the Discharge Delay in Single
Crystals of NaCl of Small Thickness

S/181/60/002/008/020/045
B006/B070

was registered by a high voltage impulse oscilloscope; the delay time was measured as the time between the beginning of the impulse and the discharge. Fig. 2 shows an impulse diagram taken for a thickness 10μ of the sample. The calibrating potential had a frequency of 0.98 Mc/sec. In all, 280 oscillograms were taken for layer thicknesses in the range $3 \cdot 10^{-4} - 18 \cdot 10^{-4}$ cm. For these, n_t/n_0 was determined as a function of the delay time (n_0 = number of samples investigated, n_t - number of those that showed a delay time (t)). The experimental curve can be well approximated by $n_t/n_0 = \exp(-t/t_m)$. t_m is the average delay time which is determined by $n_t/n_0 = 36.8\%$ ($t=t_m$). $t_m(\delta)$ is shown in Fig. 3. Fig. 3 also shows the number φ of the samples in percentage ratio of the total number of samples of a given thickness, which have a delay time of $5 \cdot 10^{-8}$ sec. Fig. 4 shows the breakdown potential U_{br} and the breakdown field strength E_{br} as functions of thickness δ of the layers. The following conclusions are derived from the experiments: The delay time is of the order of microseconds and drops exponentially with increasing δ . φ increases with δ almost linearly. The fact that the delay time rises so

Card 2/3

Investigation of the Discharge Delay in Single
Crystals of NaCl of Small Thickness

83001

S/181/60/002/008/020/045
B006/B070

steeply for thicknesses of a few microns, is not explained by the theories of Rogovskiy, Zeener (Ziner) and Frenkel', or Fowler. The author explains it by means of the impact ionization theory, and shows that an explanation is possible according to the theory of Seitz also. E_{br} decreases exponentially with increasing δ , U_{br} rises linearly with increasing δ . In this connection, results of other authors are also discussed, and A. F. Ioffe is mentioned. The author thanks Professor Doctor A. A. Vorob'yev, and G. A. Vorob'yev, Candidate of Technical Sciences, for guidance and help. There are 4 figures and 14 references: 9 Soviet, 2 US, 1 Japanese, and 2 British.

X

SUBMITTED: January 3, 1960

Card 3/3

9,2110 (1001, 1043, 1145)

88059
S/139/60/000/006/028/032
E032/E414

AUTHORS: Vorob'yev, A.A., Vorob'yev, G.A. and ~~Kostrygin, V.A.~~

TITLE: Dependence on Thickness of the Breakdown Time of a Dielectric

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.6, pp.166-167

TEXT: Previous work on the electrical breakdown of solid dielectrics (Ref.1 to 4) showed that there exists an analogy between the behaviour of solid dielectrics and air. It was shown that the formation of discharge in NaCl and KCl crystals, having a thickness of a few tenths of a millimeter or more, is in fact a single cascade process. Fig.1 shows the dependence of the discharge delay time t_d as a function of the specimen thickness of NaCl, KCl and KBr crystals (t_d is in seconds, d is in cm). Fig.2 which was obtained experimentally by the present authors shows the discharge delay time t_d for an air gap as a function of the air gap length d (in mm). The results shown in Fig.2 were obtained with $p = 759$ mm Hg.

Card 1/3

88059

S/139/60/000/006/028/032
E032/E414

Dependence on Thickness of the Breakdown Time of a Dielectric

$t = 20^{\circ}\text{C}$ and the spherical electrodes irradiated with UV to avoid statistical effects. The analogy between the two figures is apparent. There are 2 figures and 8 references: 7 Soviet and 1 non-Soviet.

ASSOCIATION: Tomskiy politekhnicheskii institut imeni S.M.Kirova
(Tomsk Polytechnical Institute imeni S.M.Kirov)

SUBMITTED: October 6, 1960

Card 2/3

88059

S/139/60/000/006/028/032
E032/E414

Dependence on Thickness of the Breakdown Time of a Dielectric

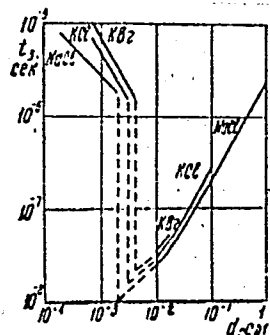


Рис. 1. Зависимость времени запаздывания разряда t_b в кристаллах NaCl, KCl и KBr от толщины образца.

Fig.1.

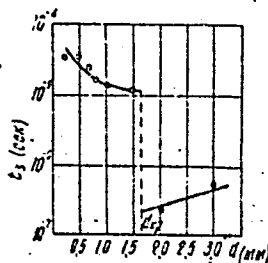


Рис. 2. Зависимость времени запаздывания разряда t_b от длины воздушного промежутка d .

Fig.2.

Card 3/3

KOSTRYGIN, V.A.; MURASHKO, L.T.

Investigation of the pulse breakdown of thin layers of ionic crystals.
Izv.vys.ucheb.zav.; fiz. no.1:169-170 '61. (MIRA 14:7)

1. Tomskiy politekhnicheskii institut imeni S.M.Kirova.
(Breakdown, Electric) (Ionic crystals—Electric properties)

9.4300

24403

S/024/61/000/002/001/014
E194/E135

AUTHORS: Vorob'yev, A.A., Vorob'yev, G.A., and Kostygin, V.A.
(Tomsk)

TITLE: On the dependence of the breakdown time and the
breakdown voltage of dielectrics on their thickness

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Energetika i avtomatika, 1961, No.2, pp. 62-64

TEXT: Tests show that there are many identical relationships
between the impulse breakdown of solid dielectrics and of air, and
there is reason to return to the hypothesis of breakdown of solid
dielectrics by impact ionisation with electrons. It is of interest
to study the relationship between the breakdown voltage and delay
time of the dielectric as a function of thickness. In air, when
 $pd \geq 1000-1500$ mm Hg.cm and the overvoltage is several percent,
streamer discharge occurs and at atmospheric pressures the delay
time is of the order of 10^{-8} sec. At low air pressures when
 $pd < 200$ mm Hg.cm the delay time is of the order of 10^{-5} sec.
This increase in delay time is due to a change in the mechanism of
breakdown. At low values of pd , Townsend's electron avalanche

Card 1/5

24403
S/024/61/000/002/001/014
E194/E135

On the dependence of the breakdown time and the breakdown voltage of dielectrics on their thickness

breakdown occurs. In the first ionisation theory of breakdown of solid dielectrics, due to A.F. Ioffe, it was shown that the electric strength should increase with reduction of thickness; it was later noted that in thin solid dielectrics the delay time may be large because of its statistical nature or because of the large number of avalanches necessary to form a conducting path between the electrodes. Early experiments on rock salt of micron thickness confirm the increase in electric strength and delay time in thin layers and show that breakdown of solid dielectrics commences with impact ionisation. Fig.1 shows the dependence of the delay time (in secs) on the thickness, d , in μ (left ordinate, KI; right ordinate, NaCl, KCl, KBr). In this figure the delay time is plotted on the y axis and the thickness on the x axis for rock salt and crystals of KCl, KBr and KI. As the thickness is reduced the delay time increases. Using the data of this figure and other data on discharge delay in crystals of 0.1 mm thick and more, a curve is constructed in Fig.2 for the relationship between

Card 2/ 5

24403

S/024/61/000/002/001/014
E194/E135

On the dependence of the breakdown time and the breakdown voltage of dielectrics on their thickness

the delay time (10^{-5} sec) and the thickness, d , cm. The sudden change in breakdown mechanism at a critical thickness of about 10^{-3} cm is noted and briefly discussed. The relationship between the delay time (10^{-4} sec) and the thickness, d , mm, was studied experimentally for air at atmospheric pressure and the results are plotted in Fig.3. The overvoltage was 10-15%. The electrodes were radiated with weak ultraviolet light to avoid statistical delay effects. Here again, at a thickness of 1.6 mm, there is a sudden change in the delay time due to change in the mechanism of breakdown. Curves of this kind are typical for dielectrics in which breakdown commences with impact ionisation. According to Paschen's law, starting from a certain value of pd , where d and λ are very near to one another U_{br} commences to increase as pd is reduced. Fig.4 shows the relationship of E_{br} (MV/cm) and U_{br} (kV) and thickness (δ , cm) for rock salt; as the thickness is reduced E_{br} increases and possibly if the thickness were still further reduced U_{br} might increase. It would be of great

Card 3/5

24403

S/024/61/000/002/001/014
E194/E135

On the dependence of the breakdown time and the breakdown voltage of dielectrics on their thickness

theoretical interest to verify this experimentally. The results presented are in agreement with the hypothesis of impact ionisation breakdown of solid dielectrics.

There are 4 figures and 9 references: 8 Soviet and 1 English.

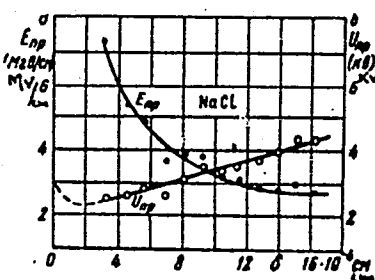
The English language reference reads as follows:

Ref.8: F. Seitz. On the theory of electron multiplication in crystals. Phys. Rev., 1949, 76, 9, 1376.

SUBMITTED: October 18, 1960

Fig.4

Card 4/5



KOSTRYGIN, V.A.; MURASHKO, L.T.

Electric strength and discharge time lag as a function of the
lattice energy in ionic crystals. Izv.vys.ucheb.zav.; fiz. no.5:
175-176 '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut pri Tomskom politekhnicheskom
institute imeni S.M.Kirova.
(Ionic crystals--Electric properties)

S/181/61/003/009/019/039
B102/B104

AUTHORS: Vorob'yev, G. A., Kostrygin, V. A., and Kostrygina, N. P.

TITLE: Study of the electric conductivity of NaCl and KCl single crystals in a thin film

PERIODICAL: Fizika tverdogo tela, v. 3, no. 9, 1961, 2680 - 2682

TEXT: The authors studied the electric conductivity of some micron-thick NaCl and KCl single crystal films in a homogeneous electric field

(10^6 v/cm). This study was made to experimentally verify the formula

$\log i \approx 0.3 \frac{d}{\lambda} + a$; i is the current passing through the dielectric, d the thickness of the film and λ the path of an electron between two ionization collisions (on the assumption of impact ionization of the dielectric). This formula is of interest since it permits a direct estimation of λ . The measurements were made with the aid of the arrangement schematically shown in Fig. 1. First, the specimen had maximum thickness (20μ). The current was measured by a highly sensitive mirror galvanometer. The specimen thickness was then reduced by $4 - 5\mu$ and the current was again measured. Thus, the currents were measured in the same specimen with 3 - 4 different thick-
Card 1/3

Study of the electric conductivity...

S/10 /61/003/009/019/039 ✓
B102/B104

nesses. The shapes of the curves $I = f(E)$ proved to be almost independent of the specimen thickness. Only in some 15 - 20 μ specimens the curves became flatter near the break down voltage. The measurement of $I = f(d)$ at constant E showed that I increased with increasing d . This phenomenon which was observed for the first time in solid dielectrics results from impact ionization. For NaCl the curves $\log I = f(d)$ deviate little from the linear form, for KCl they deviate strongly. This fact is ascribed to a volume charge that did not form due to ionization. It may be caused by high-voltage polarization or by the capture of electrons by lattice defects. This volume charge distorts the field and renders the dielectric inhomogeneous. Owing to this volume charge relation (3) is not fulfilled. The conductivity of the single-crystal films was by 7 - 8 orders of magnitude higher than that in ordinary single crystals of the same substance in weak fields. This also indicates impact ionization and ionic conductivity. The authors thank Professor Doctor A. A. Vorob'yev for advice. There are 3 figures and 8 references: 7 Soviet and 1 non-Soviet. The latter reads: F. Seitz. Phys. Rev. 76, 9, 1376, 1949.

Card 2/3

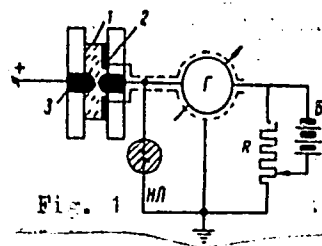
Study of the electric conductivity...

S/181/61/003/009/019/039
B102/B104

ASSOCIATION: Tomskiy politekhnicheskii institut im. S. M. Kirova (Tomsk
Polytechnical Institute imeni S. M. Kirov)

SUBMITTED: April 10, 1961

Legend to Fig. 1: (1) specimen, (2) protective ring, (3) liquid electrodes.
 Γ - mirror galvanometer, $H\Gamma$ - neon tube (shunt).



Card 3/3

VOROB'YEV, G.A.; KOSTRYGIN, V.A.; MURASHKO, L.T.

Obtaining thin dielectric films. Prib. i tekhn. eksp. 6 no. 5:198-199
S-0 '61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki, elektroniki
i avtomatiki Tomskogo politekhnicheskogo instituta.
(Dielectrics)

VOROB'YEV, A.A.; VOROB'YEV, G.A.; KOSTRYGIN, V.A.

Relation between the time lag and the path length in air.
Zhur. tekhn. fiz. 31 no.9:1135-1137 S '61. (MIRA 14:8)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki, elektroniki
i avtomatiki pri Tomskom politekhnicheskoye imeni
S.M. Kirova.

(Electric discharges)

24.7800

39544
S/024/62/000/004/001/007
E194/E455

AUTHORS: Vorob'yev, A.A., Vorob'yev, G.A., Kostrygin, V.A. (Tomsik)
TITLE: The mechanism of electric breakdown of thin layers of
solid dielectric
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Energetika i avtomatika, no.4,
1962, 66-68.

TEXT: The breakdown of thin (10^{-3} cm and less) specimens of salt
has been explained by the electron avalanche theory due to
F. Seitz (Phys. Rev., v.76, 1949, 1376) and by what is here
termed the multiple avalanche streamer mechanism. In the
avalanche streamer method of discharge with thicknesses greater
than 10^{-3} cm, the positive space charge remaining at the anodes
due to an avalanche is sufficient to form a streamer. When
the thickness is less than 10^{-3} cm, the space charge of the anode
necessary to originate a streamer accumulates by attraction to
the anode area of several electron avalanches. According to the
Seitz mechanism, the discharge time should depend on the area of
Card 1/2

S/024/62/000/004/001/007
E194/E455

The mechanism of electric ...

the cathode and according to the proposed mechanism it should be practically independent. Accordingly, rock salt specimens 10 microns thick were prepared in two forms, having cross sections of 0.45 mm and 1.2 mm. Probability plots of breakdown time show that these are respectively 5.5 and 5 microseconds, the difference being within the limits of experimental error. This result supports the hypothesis of multi-avalanche streamer breakdown mechanism. There are 3 figures. 4

SUBMITTED: March 15, 1962

Card 2/2

L 19666-63 EWT(1)/EWP(q)/EWT(m)/EWP(B)/BDS/ES(a)-2 AFFTC/ASD/ESD-3/
IJP(C)/SSD Pt-4 GG/JD

ACCESSION NR: AR3006988

S/0058/63/000/008/E049/E049

SOURCE: RZh. Fizika, Abs. 8E348

AUTHOR: Kostygin, V. A.

TITLE: Investigation of electric breakdown of thin layers of single
crystals of alkali halide salts

CITED SOURCE: Sb. Fiz. shchelochnogaloidn. kristallov, Riga, 1962,
365-369

TOPIC TAGS: electric breakdown, alkali halide single crystal,
thin layer, ionization, avalanche-streamer mechanism

TRANSLATION: An experimental investigation was made of the electric
breakdown of single crystals of NaCl, KCl, KBr, and KI at $d =$
 $= (1.50)\mu$ in a field close to homogeneous. The specimens were made
to break down using rectangular voltage pulses with a front 5×10^{-8}

Card 1/3

L 19666-63

ACCESSION NR: AR3006988

sec and an overvoltage 5--10%. On the basis of the data obtained, $t_{del} = f(d)$ and $E_{br} = f(d)$, it is established that the discharge delay time t_{del} increases with decreasing thickness up to 10^{-5} -- 10^{-6} sec, whereas for $d = 0.1$ mm we have $t_{del} = 10^{-7}$ sec. For different values of d , t_{del} is larger for crystals with smaller lattice energy. When d decreases, an increase in E_{br} is observed for all salts (for NaCl up to 8 mV/cm), and t_{del} increases, this being attributed to processes of impact ionization by electrons. In the case of thin layers, for a discharge to develop it is necessary that several electron avalanches pass through, and the discharge has a multi-avalanche-streamer character. When d is on the order of several tenths of a millimeter, the discharge has an avalanche-streamer character. Irradiation of the cathode with ultraviolet light leads

Card 2/3

L 19666-63

ACCESSION NR: AR3006988

to a decrease in E_{br} of the crystal NaCl with $d = 10\mu$, this being attributed to the multi-avalanche-streamer mechanism of breakdown of solid dielectrics. N. Torbin.

DATE ACQ: 06Sep63

SUB CODE: PH

ENCL: 00

Card 3/3

S/181/62/004/003/038/045
B108/B104

AUTHORS: Vorob'yev, G. A., and Kostygin, V. A.

TITLE: Effect of irradiation on the electrical stability of rock salt to spark-over in a thin layer

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 811-812

TEXT: In order to establish if the spark-over in thin rock salt layers is due to the accumulation of positive space charge at the anode the authors made experiments with ultraviolet light. Irradiation should liberate photoelectrons and electrons from microdefects. The experiments showed, however, that in uncolored crystals electrons were released mainly by cold emission from the cathode. There are 2 figures and 2 Soviet references. ✓

ASSOCIATION: Tomskiy politekhnicheskii institut im. S. M. Kirova (Tomsk Polytechnic Institute imeni S. M. Kirov)

SUBMITTED: December 1, 1961

Card 1/1

VOROB'YEV, A.A. (Tomsk); VOROB'YEV, G.A. (Tomsk); KOSTRYGIN, V.A. (Tomsk)

Concerning the mechanism of the breakdown of a thin layer of
solid dielectrics. Izv. AN SSSR, Otd. tekhn. nauk, Energ. i
avtom. no.4:66-68 J1-Ag '62. (MIRA 15:8)
(Dielectrics)

ACCESSION NR: AT4016320

S/0000/62/000/000/0365/0369

AUTHOR: Kostrygin, V. A.

TITLE: Investigation of electrical breakdown through thin layers of alkali halide mono-crystals

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy*. Fiz. shchelochnogaloidn. kristallov (Physics of alkali halide crystals). Riga, 1962, 365-369

TOPIC TAGS: alkali halide, alkali halide crystal, electrical breakdown, dielectric, alkali halide electrical breakdown, electric strength, crystal electric strength, impact ionization, alkali halide ionization, discharge, discharge delay

ABSTRACT: As evidence of the occurrence of impact ionization during a solid dielectric-breakdown, the author undertook to establish the occurrence of electric strengthening and an increased discharge lag in thin dielectric layers. In an improved procedure, using a microscope, errors due to the lack of structural uniformity of the prepared layers, large electrode dimensions and inaccuracies in layer thickness measurement were eliminated. The 1 x 1 x 0.5 cm, NaCl-, KCl-, KBr- and KI-monoocrystal specimens

Card 1/2

ACCESSION NR: AT4016320

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825310002-

were fastened between two plates of plastic constituting the conductor and provided with metallic NaCl-immersed electrodes allowing the finest interspace control. The breakdown was effected with 5×10^{-8} sec rectangular pulses and recorded by a high voltage electron oscillograph. It was found that the smaller the layer thickness of the same mono-crystal and the lower the lattice energy of different monocrystals, the greater the magnitude of the discharge lag and the electric strength. The 10μ thick NaCl monocrystals showed a drop in electric strength after exposure to ultraviolet radiation. The established existence of electric strengthening and greater discharge lag during dielectric breakdown is believed to confirm the existence of impact ionization. "In conclusion, the author thanks Prof. Dr. A. A. Vorob'yev and Cand. Tech. Sc. G. A. Vorob'yev for their attention and help." Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: NII at the TPI, Tomsk

SUBMITTED: 00

DATE ACQ: 06Mar64

ENCL: 00

SUB CODE: NP, IC

NO REF SOV: 003

OTHER: 001

Card 2/2

VOROB'YEV, A.A.; VOROB'YEV, G.A.; KOSTRYGIN, V.A.

Estimation of the impact ionization coefficient in crystals. Izv.vys.
ucheb.zav.;fiz.no.2:174-175 '63.

(MIRA 16:5)

1. Tomskiy politekhnicheskii institut imeni Kirova.
(Ionization) (Breakdown, Electric)

ACCESSION NR: AP4034951

S/0181/64/006/005/1560/1562

AUTHORS: Vorob'yev, A. A.; Vorob'yev, G. A.; Koncherbayev, T. K.; Kostygin,
V. A.; Nekrasova, L. G.

TITLE: Influence of the electrodes and the structure of dielectric crystals on
their dielectric strength

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1560-1562

TOPIC TAGS: alkali halide, dielectric material, dielectric strength, annealing,
potassium compound

ABSTRACT: The dielectric strength of a number of alkali-halide crystals was
measured by using several types of electrodes. Use of metallic electrodes
produced nearly equal values which were about 45% lower than the values obtained
using a saturated NaCl solution as the electrodes. Further investigation using
combinations of liquid and graphite electrodes showed that, regardless of the
anode material, the value of the dielectric strength was much lower with graphite
as the cathode than when the electrolyte was the cathode. It is concluded that
cold emission from the cathode has a significant effect on the value of the

Card 1/2

ACCESSION NR: AP4034951

dielectric strength. The effect of annealing the crystals was also investigated. The dielectric strengths of alkali-halide monocrystals of the potassium series were measured with both unannealed and annealed crystals. It was found that the dielectric strength of the unannealed crystal was always larger than that of the annealed crystal. The difference between the two values increased with decreasing lattice energy, ranging from about 10% for KCl to about 40% for KI. It was also noted that the dispersion of experimental values was significantly less for the annealed crystals. Thus, mechanical stresses and dislocations in the unannealed crystal play an essential role in scattering electrons, increasing the dielectric strength. Orig. art. has: 1 diagram and 2 tables.

ASSOCIATION: Tomskiy politekhnicheskii institut im. S. M. Kirova (Tomsk Polytechnic Institute)

SUBMITTED: 13Aug63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: SS

NO REF SOV: 006

OTHER: 005

Card 2/2

VOROB'YEV, A. A., doktor fiziko-matematicheskikh nauk, prof. ; VOROB'YEV,
G. A. , kand. tekhn. nauk; KOSTRYGIN, V. A., kand. tekhn. nauk

Dependence of the electrical strength of solid dielectrics on
the thickness of the breakdown layer. Izv. vyz. ucheb. zav.;
energ. 7 no.5:108-110 My '64. (MIRA 17:7)

1. Tomskiy ordena Trudovogo Krasnogo Znameni politekhnicheskii
institut imeni Kirova. Predstavlena kafedroy tekhniki vysokikh
napryazheniy.

I 43154-66 EWT(1)/EWT(m)/EWP(1)/T LJP(c) EW/RM

ACC NR: AR6010515

SOURCE CODE: UR/0198/65/000/010/B012/B013

AUTHOR: Kostygin, V. A.

TITLE: Investigation of the electrical breakdown of films of organic glass and celluloid

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 10B64

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 174-176

TOPIC TAGS: organic glass, cellulose plastic, dielectric breakdown, impact ionization, thin film

ABSTRACT: An experimental investigation was performed on the dc- and pulsed-voltage breakdown (rectangular pulses with a front duration of $\sim 5 \cdot 10^{-8}$ sec and excess voltages of 7.5-10%) of an organic glass $(5-16) \cdot 10^{-4}$ cm thick and celluloid $(6-30) \cdot 10^{-4}$ cm thick. The effect of the strengthening and increased time to breakdown at small thicknesses of dielectrics of amorphous and crystalline structure indicates the presence of impact ionization during breakdown. Emphasis is placed on the importance of studying the question of the strengthening of thin films for the development of microminiature devices, in particular film capacitors which have high electrical strength in addition to high capacitance. [Translation of abstract]

Card 1/2

UDC: 621.315.616.96.015.51

L 43154-56

ACC NR: AR6010515

3 illustrations and bibliography of 11 titles. [Tomsk Polytechnic Institute im. S. M. Kirov
(Tomskiy politekhnich. in-t)] A. Petrashko

SUB CODE: 11, 09

Card 2/2 MLP

L 18217-65 EWT(d)/EWT(1)/EWP(c)/EWP(v)/T/EWP(k)/EWP(1) PF-4/PI-4 ASD(p)-3
 ACCESSION NR: AT5001226 MLK s/0000/61/000/000/0174/0180

AUTHOR: Fedorov, Yu. N.; Serebryakov, A. G.; Kostrygina, N. A. B

TITLE: UKL-2 automatic ultrasonic installation for the monitoring of internal defects in a sheet 21

SOURCE: Vsesoyuznaya mezhvuzovskaya konferentsiya po promyshlennomu primeneniyu ul'trazvuka. Kuyby*shev, 1960. Promyshlennoye primeneniye ul'trazvuka (Industrial application of ultrasound); trudy konferentsii. Kuyby*shev, 1961, 174-180

TOPIC TAGS: ultrasonic defectoscopy, sheet material, internal defect/UKL-2

ABSTRACT: The UKL-2 apparatus was developed to detect automatically flake formations or external inclusions in sheet metal, and is based on an ultrasonic shadow-type immersion method using several pairs of transmitting and receiving piezo-pickups. A block diagram of the method is shown in Fig. 1 of the Enclosure. Water is used to couple the tested sheet acoustically with the transmitter and receiver pickups, which move over the stationary sheet in a horizontal direction, scanning a strip 50 mm wide. After each passage of the pickups, the sheet is raised 50 mm and the next strip is scanned. Upon detection of a fault, light and

Card 1/3

U 13217-65

A SESSION NR: AT5001226

so d signals are produced and the scanning is stopped automatically. The appropriate coordinates of the fault are read on scales, and a more accurate determination is made manually with the aid of a cathode ray tube indicator. The electronic circuitry, the actuating mechanisms, and the pickups are described briefly. The equipment can handle sheets 1.5--15 mm thick, up to 200 mm long and up to 1000 mm wide, with maximum sheet curvature 10 mm. The maximum sheet weight is 200 kg. The scanning rate is 0.2 m²/min, and the minimum defect size is 2.5 mm². Orig. art. has: 6 figures.

ASSOCIATION: None

SUBMITTED: 11May61

ENCL: 01

SUB CODE: GP, IE

NR REF SOV: 000

OTHER: 000

Card 2/3

L 18217-65

ACCESSION N^o: AT5001226

ENCLOSURE: 01

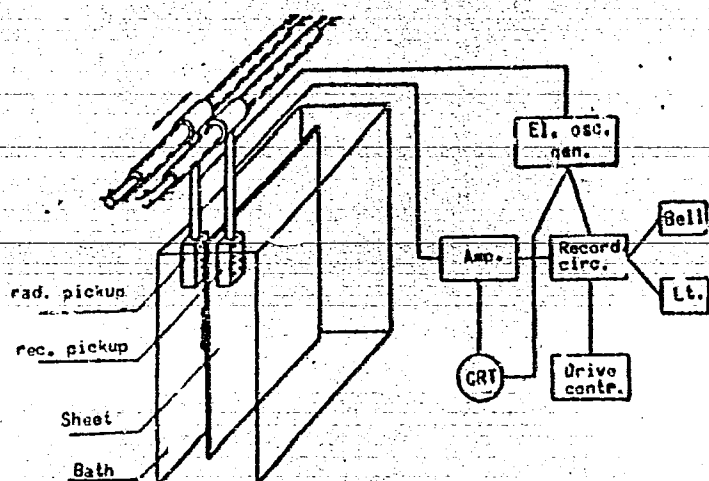


Fig. 1. Diagram of method

Card 3/3

S/137/62/000/004/066/201
A052/A101

1.8000

AUTHORS: Fedorov, Yu. N., Serebryakov, A. G., Kostrygina, N. A.

TITLE: UKL-2 (UKL-2) automated ultrasonic unit for internal flaw detection in sheets

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 26, abstract 4D148 (V sb. "Prom. primeneniye ul'trazvuka. Kuybyshevsk. aviats. in-t". Kuybyshev. 1961, 174-180)

TEXT: The method and installation for automatic internal flaw detection (laminations, non-metal impurities etc.) in rolled sheets are described. The described equipment is based on the shadow pulse immersion ultrasonic method. UKL-2 unit is described, and the general design scheme with the block diagram are presented. The unit is used in the industry and has the following characteristics: the tested sheet size = 1.5 - 15 x 1,000 - 1,500 mm; the admissible curvature of the test sheet is up to 10 mm, the maximum weight of the test sheet = 200 kg. The speed of control is 0.2 m/min and the maximum area of the detected flaw is 25 mm².

[Abstracter's note: Complete translation]

A. Leont'yev

Card 1/1

1.8000

39626
S/194/62/000/004/074/105
D295/D308

AUTHORS: Fedorov, Yu. N., Serebryakov, A. G. and Kostrygina, N. A.

TITLE: The YKJ-2(UKL-2) automated ultrasonic equipment for testing for internal defects in a sheet.

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 4, 1962, abstract 4-5-46g (V sb. Prom. primeneniye ul'trazvuka. Kuybyshevsk. aviats. in-t. Kuybyshev, 1961, 174-180) ✓

TEXT: A description is given of an ultrasonic apparatus for the through testing of sheets by an immersion method using 10 pairs of probes, which enable a 50 mm wide strip to be verified. The pickups accomplish a reciprocating motion, moving horizontally within the extreme positions, after which the sheet, fixed vertically, is raised by a height equal to the strip scanned by the pickups. The process is carried out automatically until the whole sheet has been checked. Each radiating probe is connected to its own genera-

Card 1/2 // See S 194-62-000-004-073-105.

The UKL-2 automated ...

S/194/62/000/004/074/105
D295/D308

tor, and all receivers are connected to a common amplifier. In the presence of defects an automatic stop is operated, which interrupts the motion of the pickups. The minimum size of the defects that can be detected by the apparatus is 2.5 to 3 mm², depending on the state of the surface and on the warping of the sheet. The apparatus enables sheets of 1.5 - 15 mm thickness and 1.2 x 1.0 m² to be tested at a rate of 0.2 m²/min. A diagram of the equipment and a pulse diagram are given. 6 figures. / Abstracter's note: Complete translation. /

Card 2/2

ACCESSION NR: AT4013980

S/3070/63/000/000/0098/0100

AUTHOR: Fedorov, Yu. N.; Serebryakov, A. G.; Kostrygina, N. A.; Tsyro, O. L.; Shchukin, A. I.

TITLE: The semi-automatic ultrasonic apparatus UKL-2 for inspecting sheet metal for internal defects

SOURCE: Novy*ye mashiny* i pribory* dlya ispy*taniya metallov. Sbornik statey. Moscow, Metallurgizdat, 1963, 98-100

TOPIC TAGS: sheet metal inspection, ultrasonic inspection, piezoelectric transducer, metal defect, metal sheet

ABSTRACT: For detection of internal defects (laminations, non-metallic inclusions) in sheet metal, a semi-automatic immersed ultrasonic inspection device has been developed, in which several pairs of transmitting and receiving piezoelectric transducers are used. The transmitter 4 and receiver 3 are placed symmetrically on opposite sides of the test sheet 1. (See Fig. 1 of the Enclosure.) Water is used as the immersion liquid in the test tank 1. With the aid of power-driven threaded spindles, the transmitter and receiver can be moved horizontally back and forth along the inspected sheet with a speed of 6.8 m per minute. During this movement, the sheet is stationary. At the end of each passage, the transducers

Card 1/4

ACCESSION NR: AT4013980

are arrested, and the sheet is raised by the width covered by inspection during one passage. At the detection of a defect, a sonic signal 6, a light signal 7, and an automatic stopping device are triggered simultaneously. The approximate coordinates of the defect can be determined by taking readings on scales. For more accurate locating of the defect, a manual drive and an electron beam indicator 9 can be used. The drive mechanisms for the sheet and the transducers are mounted on the test tank structure. Adjustment is provided for different sizes of sheets to be inspected. All automation and electronic elements are unified in one cabinet, in the upper panel of which the controls are installed. The electric scheme of the installation is described, with some simplifications but in considerable detail. The receiver and transmitter each contain ten piezoelectric transducers, 10 mm in diameter and 1 mm thick. The frequency of ultrasonic vibrations is 2.8 megacycles/sec. The circular quartz plates are arranged in two vertical rows, overlapping 40%, permitting the inspection of a 50 mm wide strip during each horizontal path. The resolving capacity of the installation was determined by examining sheet specimens with artificial defects, represented by flat bottom drillings, not fully penetrating the sheet and closed by plugs of the same material. As a result of these tests, it has been established that the minimum size of a defect detectable by the apparatus is 2.5-3 mm². However, this size depends on

Card 2/4

ACCESSION NR: AT4013980

many factors, such as kind of defect, sheet thickness, surface condition, degree of flatness, and is 3.5-4 mm² in practice. At the present time, three UKL-2 installations are in operation at the "Krasny*y Vy*borzhets" plant in Leningrad. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 20Feb64

ENCL: 01

SUB CODE: MM

NO REF SOV: 001

OTHER: 000

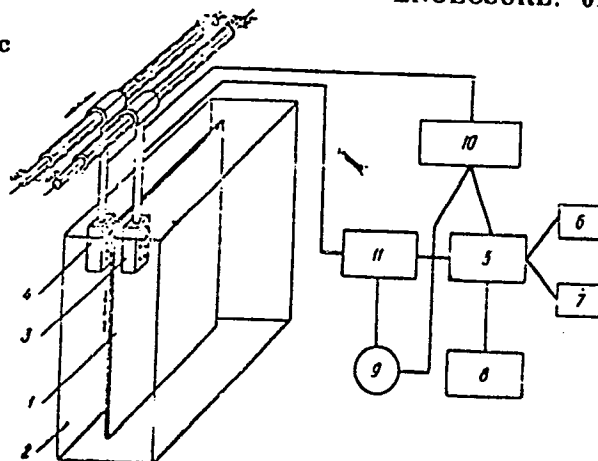
Card 3/4

ACCESSION NR: AT4013980

ENCLOSURE: 01

Fig. 1. Schematic illustration of ultrasonic inspection equipment.

- 1 — metal sheet under inspection
- 2 — test tank with water
- 3 — receiver
- 4 — transmitter (sound generator)
- 5 — defect recorder
- 6 — sonic signal
- 7 — light signal
- 8 — stopping device
- 9 — electron beam indicator for accurate locating of defect
- 10 — electric vibration generators
- 11 — amplifier



Card 4/4

S/181/61/003/009/019/039
B102/B104

AUTHORS: Vorob'yev, G. A., Kostrygin, V. A., and Kostrygina, N. P.

TITLE: Study of the electric conductivity of NaCl and KCl single crystals in a thin film

PERIODICAL: Fizika tverdogo tela, v. 3, no. 9, 1961, 2680 - 2682

TEXT: The authors studied the electric conductivity of some micron-thick NaCl and KCl single crystal films in a homogeneous electric field

(10^6 v/cm). This study was made to experimentally verify the formula

$\log i \approx 0.3 \frac{d}{\lambda} + a$; i is the current passing through the dielectric, d the thickness of the film and λ the path of an electron between two ionization collisions (on the assumption of impact ionization of the dielectric). This formula is of interest since it permits a direct estimation of λ . The measurements were made with the aid of the arrangement schematically shown in Fig. 1. First, the specimen had maximum thickness (20μ). The current was measured by a highly sensitive mirror galvanometer. The specimen thickness was then reduced by $4 - 5\mu$ and the current was again measured. Thus, the currents were measured in the same specimen with 3 - 4 different thick-
Card 1/3

Study of the electric conductivity...

S/181/61/003/009/019/039 ✓
B102/B104

nesses. The shapes of the curves $I = f(E)$ proved to be almost independent of the specimen thickness. Only in some 15 - 20 μ specimens the curves became flatter near the break down voltage. The measurement of $I = f(d)$ at constant E showed that I increased with increasing d . This phenomenon which was observed for the first time in solid dielectrics results from impact ionization. For NaCl the curves $\log I = f(d)$ deviate little from the linear form, for KCl they deviate strongly. This fact is ascribed to a volume charge that did not form due to ionization. It may be caused by high-voltage polarization or by the capture of electrons by lattice defects. This volume charge distorts the field and renders the dielectric inhomogeneous. Owing to this volume charge relation (3) is not fulfilled. The conductivity of the single-crystal films was by 7 - 8 orders of magnitude higher than that in ordinary single crystals of the same substance in weak fields. This also indicates impact ionization and ionic conductivity. The authors thank Professor Doctor A. A. Vorob'yev for advice. There are 3 figures and 8 references: 7 Soviet and 1 non-Soviet. The latter reads: F. Seitz. Phys. Rev. 76, 9, 1376, 1949.

Card 2/3

ASHIKHMIN, A.K.; BUKANOV, M.A.; DLUGACH, B.A.; DOBROSEL'SKIY, K.M., inzhener;
KOSTRYKIN, A.A.; LEBEDNEVA, T.P.; NIKITIN, V.D.; PARBENOV, Ya.D.;
NIKITINA, V.D., professor, redaktor; GULEV, Ya.F., redaktor; VERINA,
G.P., tekhnicheskii redaktor

[Handbook for hump yard workers] *Rukovodstvo rabotnikam sortirovochnoi gori.* Moskva, Gos. transp. zhel-dor. izd-vo, 1950. 222p
[Microfilm] (MLRA 10:1)

1. Russia (1923- U.S.S.R.) *Ministerstvo putey soobshcheniya*
(Railroads--Hump yards)

KOSTRYKIN, Mikhail Iosifovich; LUKASHIN, Tikhon Alekseyevich;
VAVILOV, Mikhail Andreyevich; MAKIYENKO, N.I., inzh.,
retsenzent; BOLOTIN, A.I., inzh., retsenzent; KITAYEV,
V.Ye., inzh., retsenzent; KADOBNOV, V.F., inzh.,
retsenzent; BORZOV, K.V., inzh., retsenzent; ORLOV, M.P.,
inzh., otv. red.; KRASNYANSKIY, Ye.A., inzh., red.;
SILINA, L.A., red.izd-va; SABITOV, A., tekhn. red.

[Metal work shop and electric equipment installation opera-
tions] Slesarnoe i elektromontazhnoe delo. Moskva, Gosgor-
tekhizdat, 1963. 182 p. (MIRA 17:1)

(Electric wiring)

(Metalwork)

ROZENBERG, G.Sh., kand.tekhn.nauk; KOSTRYKIN, V.F.

Certain advantages in the use of straight symmetrical stator blades
for radial axial-flow turbines. Trudy TSNIIMF 8 no.5:34-37 '63.
(MIRA 17:3)

ACC NR: AR6022398

(N)

SOURCE CODE: UR/0398/66/000/003/VC11/VO11

AUTHOR: Kostykin, V. F.

TITLE: Gas flow in the annular channel of the bucketless guide in a radial turbine

SOURCE: Ref. zh. Vodnyy transport, Abs. 3V83

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 62, 1965, 28-33

TOPIC TAGS: turbine, turbine design, heat balance, heat equation, heat measurement, engine component, heat loss, thermodynamic state equation, *GAS FLOW*

ABSTRACT: The solution to the problem of distribution of heat drops in the spiral duct and the annular channel of the bucketless guide requires an evaluation of losses in both elements. Calculation methods are lacking at this time. Only experiment can provide the solution to the problem. An equation for the dissipation factor is brought out:

$$\zeta = \frac{\frac{0.0406}{Re^{0.2} \sin \alpha_0^{0.8}} (1 - r_1^{0.8} \frac{r_1}{l_1})}{\left[1 - \frac{0.033}{Re^{0.2} \sin \alpha_0^{0.8}} \cdot \frac{r_1}{l_1} (1 - r_1^{0.8})^2 \right] r_1^2}$$

Card 1/2

UDC: 621.438:629.12

ACC NR: AR6022398

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825310002-0

where the indices 0 and 1 designate the parameters at the annular channel inlet and outlet, χ is the width of the annular channel, r is the radius, and α is the angle between the absolute and peripheral directions of the velocity. 5 figures. Bibliography of 4 titles. [Translation of abstract]

SUB CODE: 13,10,20

Card 2/2

S/229/63/000/C01/001/004
E194/E455

AUTHORS: Rozenberg, G.Sh., Candidate of Technical Sciences,
Kostyrykin, V.F., Engineer, Kastal'skiy, S.A., Engineer,
Sadadin, V.A., Engineer

TITLE: The use of gas turbines as marine auxiliaries

PERIODICAL: Sudostroyeniye, no.1, 1963, 24-29

TEXT: Gas turbines offer advantages as marine auxiliaries in cases where their light weight, simplicity of construction and reliability are of primary importance and their heavy fuel consumption is acceptable. This applies to the drive of emergency and peak generators and to fire pumps. If waste-heat boilers are used in conjunction with auxiliary gas-turbines, the fuel consumption may be less by a factor of 1.5 than that for a diesel generator with auxiliary boiler or a steam turbo-generator with main boiler. This method has been used on the American ship "Pioneer Moor". In hydrofoil vessels weight and space are at a premium but voyages are brief and refuelling is frequent. Under these circumstances, gas turbines could offer considerable advantages as auxiliaries. As compared with the usual diesel engines, and making due allowance for fuel consumption, the output

Card 1/2

The use of gas turbines ...

S/229/63/000/001/001/004
E194/E455

of generators, or of pumps, is three times greater with gas-turbine drive. Loading pumps on tankers are usually steam-driven and particularly on diesel and gas-turbine tankers this requires large auxiliary boilers. Of course some boiler provision must be made for heating the cargo, for washing tanks and meeting general ship requirements during voyages, but the extra power required during loading operations is better provided by an independent drive from either a diesel or gas turbine. In tankers too, an inert gas atmosphere must sometimes be provided in fuel tanks; a gas turbine can serve this purpose and also provide compressed air for main engine starting and so on. Gas turbines for marine auxiliary use should be of the simple open-circuit type without regeneration. A range of sizes will be required between 45 and 1000 h.p., the majority up to 300 h.p. For gas turbines up to 500 h.p. radial turbines and centrifugal compressors give higher efficiencies than axial turbines and compressors. It is unlikely that gas turbines will be advantageous as the main drives of ship's generators except where a waste-heat boiler can be used. However, gas turbines may be very useful as peak load generators, particularly in passenger ships. There are 6 figures and 5 tables.
Card 2/2

ACC NR: AR6028070

(A_N)

SOURCE CODE: UR/0124/66/000/005/B047/B047

AUTHOR: Kostykin, V. F.

TITLE: Gas flow in the annular channel of a blade-less radial turbine impeller

SOURCE: Ref. zh. Mekhanika, Abs. 58282

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 62, 1965, 28-33

TOPIC TAGS: gas flow, turbine

ABSTRACT: To solve the problem of heat gradients in the spiral ducts and in the ring channel of a blade-less impeller, it is necessary to evaluate the losses in both elements. At the present time analytical methods are lacking, and the answer to this question can only be obtained experimentally. The expression for the coefficient of energy loss is derived in the form

$$\zeta = \frac{\frac{0.0406}{R^{0.2} \sin \alpha_0^{0.8}} (1 - \bar{r}_1)^{0.8} \frac{r_1}{l}}{\left[1 - \frac{0.033}{R^{0.2} \sin \alpha_0^{0.8}} \frac{r_1}{l} (1 - \bar{r}_1)^{0.8} \right]^3 \bar{r}_1^2}$$

where the indices 0 and 1 designate parameters at the inlet and outlet of the ring

Card 1/2

ACC NR: AR6028070

CIA-RDP86-00513R000825310002-0

channel, l - width of the ring channel, r - radius, α - angle between the absolute and tangential fluid velocities. Bibliography of 4 titles. S. Korzh
[Translation of abstract]

SUB CODE: 21

Card 2/2